

NSW PREMIER'S TEACHER SCHOLARSHIPS:

PREMIER'S AUSGRID ENVIRONMENTAL EDUCATION SCHOLARSHIP

SUPPORTING EDIBLE SCHOOL GARDENS

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Introduction

There is increasing interest in Australia in the use of school food gardens as a focus for cross-curriculum teaching and enhanced student engagement (Stephanie Alexander Kitchen Garden Foundation, 2011). Recent research suggests that school gardening can contribute to improvement in scientific knowledge, literacy and numeracy skills, increased confidence, self esteem, emotional wellbeing, positive behaviour and healthy food choices (Desmond, Grieshop & Subramaniam, 2002; Block & Johnson, 2009; Passy, Morris & Reed, 2010). The latter report *Gardening in Schools: A vital tool for children's learning* identified three core areas in which children's lives are greatly improved through gardening: they become ready to learn, resilient and responsible. Also significant in urbanised populations, as in Australia, are the findings that activity in outdoor places contributes to positive mental health (Malone, 2007, 2008; Townsend & Weerasuriya, 2010).

Importantly, gardening at school potentially provides students with opportunity to understand their personal connectedness to the biological world, and to act upon understandings about the significance of carbon emissions and other environmental impacts associated with the packaging, prolonged storage and transport of food. Such understandings and the pedagogical potential of learning through gardening are entirely consistent with objectives of the mandatory NSW Department of Education and Training (DET) *Policy on Environmental Education for Schools* (NSW DET, 2001, 2006); with specific outcome statements in contemporary NSW syllabus documents (see for example Human Society and Environment (HSIE) outcomes ENS 3.5, 3.6); with the *Melbourne Declaration* (MCEETYA, 2008); the cross-curriculum priority 'sustainability' in the developing *Australian Curriculum* (Australian Curriculum and Reporting Authority, 2012); and with the principles of Education for Sustainability (EfS) (Australian Government Department of Environment and Heritage (AGDEH), 2005).

Many publications describe the attributes of schools which have a successful whole school focus on environmental education (see for example NSW DET, 2001; Breiting, Mayer & Mogensen, 2005). They identify successful environmental education as being dependent upon the commitment and actions of everybody in the school community. Similarly a former *Premier's Environmental Education Scholarship* recipient, Kathleen Gannon, lists, after her visit to 19 schools who were operating kitchen gardens, the roles of multiple key players in contributing to the success of the garden enterprise. Key players were the principal; teachers, aides, ground and canteen staff; students; community members and outside agencies. Success of the school garden it seems, is dependent upon the interest and level of support of many.

Aim of the study

The purpose of my study has been to build upon existing knowledge of the organisation and benefits of school gardens and of outdoor learning in general. As an employee of a NSW Environmental Education Centre, my work role is to teach visiting school students in ways consistent with the NSW school curriculum and the NSW *Environmental Education Policy for Schools* (2001, 2006). Additionally, my role is to contribute to the professional learning of teachers and to support schools in an outreach way in environmental education. Therefore, throughout my study tour I sought to identify practical ways of organising and encouraging gardening, especially food gardening in schools and to explore ways this has been linked to curriculum and to programs of professional learning for teachers.

In the United Kingdom, roles similar to mine are undertaken in relation to school gardening by an independent institution, The Royal Horticultural Society (RHS). The education of school groups in outdoor, nature-related education is also undertaken by the World Wetland Trust (WWT). For this reason these organisations were of interest to me. The RHS operate four teaching gardens around the UK, staffed with education officers. They offer garden visits free to school classes that include curriculum integrated sessions with the education officer. Additionally the RHS, as a part of its *Campaign for School Gardening* (Royal Horticultural Society, 2008) offers day long continuing teacher professional development (CPD) on school garden topics and free 'Twilight' teacher CPD held after school hours at partner local schools by regional advisors. Although the RHS serves a far greater population than our EEC, the structure of their endeavours parallels ours. How do they go about food garden related teaching and what could we learn from them? What could we learn from the endeavours of the WWT whose centres were often remote from schools and whose student visitors paid a fee?

What I did

To find some answers to these questions, I worked with education officers at the four RHS teaching gardens in UK; attended three RHS CPD courses; accompanied three RHS regional advisors as we visited schools; and spoke with participating teachers and head teachers at every opportunity. I also attended three WWT Wetlands locations, speaking with education officers and with visiting teachers where possible. I kept detailed notes of all conversations and observations and used a camera to record data where appropriate. In particular I noted the methods individuals used to present their ideas and the content of the ideas themselves. I gathered resources and resource lists wherever possible.

Findings

Although I have obtained many useful practical ideas of the kind valued by busy teachers, this report will mostly present an analysis of the processes used to teach and encourage. It is therefore organised according to the organisational structure of student and teacher education used by the RHS and WWT Wetlands.

Continuing Professional Development Events

The RHS contracted out the work for CPD presentations as well as using their own employees.

The three CPD days that I attended were:

- *Using the school garden to teach* at Wisley Garden;
- *Gardening in schools: keeping up the momentum and learning new skills* at Cambridge University; and
- *Key gardening skills, tips and ideas for a successful school gardening project* at Hyde Hall Garden.

The presenters of the CPD days incorporated the following elements into their teaching:

- inviting participants to report on vegetable gardening already operating in their schools
- providing examples of garden activities suitable for school students
- demonstrating techniques of vegetable growing (sowing, planting, soil preparation)
- requiring participants to practise associated techniques
- giving suggestions of how to organise students during garden activities

- suggesting successful elements of garden design eg providing a student seating area for discussion and instruction, using raised beds with dimensions that allow student access without trampling.
- discussing ways of drawing in the wider school community to reduce work load
- sharing ideas about fund raising for garden projects
- preparing a vegetable lunch outdoors with participant assistance
- provision of teaching resource lists
- suggesting ideas on the organisation of tools, soil, weeding and planting within the context of the school year.
- drawing attention to conceptual notions incorporated in curriculum and linking these to gardening.
- directing participants' attention to examples showing the organisation of curriculum related gardening activity linked to seasonal cycles ie what could happen in the garden and when, how this could be relevant to curriculum and how the garden resource could be shared amongst classes

These kinds of suggestion are particularly helpful for teachers who are already busy and who need to see not only the relevance of gardening to curriculum and practical ways forward, but also to be assured that there is a finite number of 'things to do', meaning that tasks and responsibilities can be rostered and shared amongst classes.

There are many links between gardening and curriculum. As an example, take the aim of curriculum in English for students to not only be able to read a variety of texts but also to be able to comprehend¹ that which they are reading. Reading the instructions on the back of a packet of seeds is a reading skill, but comprehending that which is read is a related additional skill. Whilst following the instructions to actually plant the seed the student is striving to read and to comprehend and the actual act of sowing the seed aids comprehension. Additionally the text on the seed packet is an example of a particular text type with a particular structure and in this way is relevant to the English curriculum². This is one small example of addressing core curriculum through gardening.

Multiple small suggestions seemed to add to participant confidence that the task of food gardening is possible in schools. An example is the simple idea of having three compost bins, one for each term in a three term school year. Of course compost makers outside of school use various other criteria when establishing 'number of compost bins', but offering a number that corresponded with the number of school terms gives a practical simplification. This is a key notion around which activity in school relevant to composting can be organised and allows the novice compost maker to proceed and to later alter practice if required, based on observation and experience of compost making.

Underlying the thinking and decision making of those with whom I spoke in RHS education (both garden education officers and CPD presenters) appeared to be a love of nature expressed through

¹ An example from the Australian Curriculum English V3 at Year 2 level is that students:

Use comprehension strategies to build literal and inferred meaning and begin to analyse texts by drawing on growing knowledge of context, language and visual features and print and multimodal text structures (ACELY1670)

² The following example is from the Australian Curriculum English V3 at Year 2 level where students:

Understand that different types of texts have identifiable text structures and language features that help the text serve its purpose (ACELA1463)

gardening and a desire to communicate this notion to others. This enthusiasm and the conscientious activity that attended it are the strength of RHS education. Importantly to me, such intentions were often accompanied by decision making apparently aligned with notions of environmental and social sustainability. I often needed to question people more closely for them to express views on environmental sustainability, meaning that such notions were implicit, rather than explicit in their discussion. However, attention to sustainability was often evident in their practice, for example, presenters' selection of renewable materials, conscious seeking out of environmentally sustainable techniques and materials and focus on craft activities based around natural and reused materials.

All of the CPD days that I attended included elements of practical gardening skills. I think that practice of gardening skills would add to the confidence of teachers. I also believe that CPD directed at curriculum links of the kind that I observed is of great importance and that the value of gardening should continue to be promoted amongst teaching staff who will hopefully recognise the value of gardening in achieving the goals of core curriculum.

Twilight training events and school visits

Twilight training events were held after school in primary schools that had commenced their vegetable garden enterprise. 'Twilights' were free to participants. They provided an opportunity for 'home' school personnel to explain their aims to colleagues both within the 'home' school and from other schools in the district. They were a valuable venue for personnel most active in the garden to convey to others what could be achieved through garden activity, how it could be linked to curriculum, how the garden could be shared within the school and what expectations they held for both staff and students in relation to the garden. Twilight events were also attended by the RHS regional advisor who made a supporting presentation using elements such as those already listed for the CPD events. Twilights were particularly valuable because:

- Attendees could see the 'garden in action'
- The sessions were informal and highly interactive allowing focus and discussion on issues common to the group
- School students could be invited to participate
- The 'home' school could request a particular agenda from the RHS advisor
- They provided a venue for communication amongst home school personnel thus potentially strengthening the gardening ethos of the school.

RHS regional advisors always provided materials such as pots, plants, seeds, etc so that a planned practical activity could take place. It was a hallmark of RHS education that participants left the session with 'something in their hands' or 'something planted in the school garden'. Visits from the regional advisor were occasions for 'getting things done'.

It was common practice for the RHS Regional Advisor invited to present a twilight event to also work with students in the school prior to the twilight. The sessions always contained a practical element aimed at skill as well as knowledge development. As with the twilight session, students either planted something at school or left with 'something in their hands'. This often applied also to school students attending the RHS gardens.

School visits to RHS gardens and WWT Wetlands

The education officers employed at each RHS garden worked with class size school groups for up to about two hours in each session. Sessions were free. Most classes undertook a second session run in a 'self-guided' way by the class teacher using the RHS garden itself as a resource (things to observe and so on). Sessions in the garden were diverse and reflected the interests of the RHS presenters and the resources at hand. As an example some gardens had excellent facilities allowing children to plant seeds and 'pot on'. In a session titled 'Dig for Victory' students learnt about the kinds of vegetables that were commonly grown during World War II. In an area of open soil students were taught how to use garden tools and encouraged to 'dig'. The focus of the session was on life during the war. The students were being encouraged to understand events of that time through the lens of everyday family life showing how food production supported the lives of people within a disrupted society. There were other sessions about plants in everyday life, recognition of vegetables, use of vegetables in food preparation, use of plants in dyeing and weaving and activities surrounding the comparison and improvement of soils. Some sessions followed the seasonal cycle of plants in the garden.

The garden sessions were well patronised with one obstacle to attendance being the cost of transport. RHS education officers actively sought schemes that subsidised cost of travel to the garden for less privileged school groups. One key to ongoing patronage of the garden sessions was the close integration of the presentations with elements of the national curriculum.

At the WWT Wetlands, education officers offered expertise, amazing exhibits and real wildlife. The strong conservation ethic of the WWT was at the forefront of interpretation. Of particular interest were displays that linked everyday human activity (such as domestic water use) to the health of wetlands and the survival of wetland species. Sessions for visiting schools were curriculum focussed, exploring concepts such as adaptation and habitat dependence of particular species present at the centres.

Visits to schools practising food growing

Visits to primary schools were a great delight. This was not a series of visits to school 'show' gardens but rather to schools which were making an effort in food gardening. Some schools were vibrant places with staff deeply enthused about garden activities. There was strong leadership from the school executive who were prepared to use professional learning funds for staff development of garden skills, dedicate staff meeting time to garden related matters, promote the work of teacher garden enthusiasts, require a minimum of garden related teaching from all teachers and organise events with a garden focus. There were plans made in a shared way by teachers for how the garden would be developed, shared and used in the curriculum. Funds were allocated to the garden and displays of children's work showed the importance of the food garden in the culture of the school. People often spoke with enthusiasm about social advantages of gardening. Commonly people believed that pupils enjoyed the garden. Of particular interest were anecdotal stories of how calls for help in school garden activities drew the community into the school. Volunteers were well cared for with arrangements being made for 'coffee mornings' in association with garden activity and 'theme' days and barbecues where volunteers prepared garden beds and did other basic ground work. In 'deprived' areas some teachers believed that families did not talk to each other a lot but that school garden events shared by family members gave them a common experience that became a focus of conversation. Local volunteers who were vegetable gardeners regularly ran 'garden club'

at some schools. There were also stories of schools that had excellent resources and good gardens but the gardens had been developed by one or two adults working in the school in the absence of interest from others. It was said that pupils did not respect those gardens and that this came about where teachers were not using the garden as part of their curriculum related investigations.

Resources

RHS and WWT personnel shared with me many resources suitable for both school student learning and teacher professional learning. They included simple equipment lists (for example a list of tools appropriate for school student use), notes on safety, useful books and websites. Tables of information about how to share use of the school food garden and ideas about curriculum integration and lessons were particularly welcome. Some information, such as what should be planted and harvested in which part of the school year provide a useful basis for information that could be prepared for southern seasons. Also valuable were lessons observed and displays of children's work.

Concluding remarks

I have sought to identify practical ways of organising and encouraging food gardening in schools and to explore ways this has been linked to curriculum and to programs of professional learning for teachers. To this end, analysis of the systems of education services provided by the RHS and WWT Wetlands has provided valuable information. Particularly useful have been discussions with teachers and head teachers in schools where food gardening is taking place, and the officers of the RHS were able to arrange my access to these schools.

Shared planning within the school as well as shared efforts were keys to success. Importantly the view of school gardening as a curriculum related enterprise closely linked to the core business of the school and potentially contributing to the social dimensions of the school implies a critical role for school leadership. Research has shown the multiple benefits of school gardening as a meaningful part of outdoor learning as well as the academic purpose of the school. However discussions with teachers and head teachers suggest that whilst the enthusiasm of a few might instigate school food gardening, if it is to reach its potential as an element of school life that helps to define the school's values and culture, then school leadership must share and nurture that enthusiasm. This study shows how outside agencies such as the RHS have a clear role in bringing the advantages of school food gardening to the forefront and providing particular kinds of service to support its emergence and maintenance in schools.

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